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An
Inaugural Essay
on
Bubonocele
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By the term, bubonocele, or inguinal hernia, surgeons understand the protrusion of some of the viscera of the abdomen, into a sac, formed by an elongation of the peritoneum, passing out of one of the rings of the abdomen.

Before describing the causes, and effects of the above disease, I conceive it requisite, to describe the anatomy of the parts, concerned in this species of hernia.

After the integuments of the abdomen are removed, we observe a thin, but compact sheet of cellular substance, covering the abdominal muscles, which, modern anatomists have named the superficial fascia: Beneath this fascia, may be seen an artery, termed, arteria ad cutem abdominis, passing over Poupart's ligament, and running towards the umbilicus; it is a branch of the femoral; and, from its intimate relation with the operation for the above disease, it should be particularly noticed, in the dissection of the parts. Under this fascia, lies the tendon of the

external oblique muscle, the doubling of the lower margin of which, constitutes Poupart's ligament; it takes origin from the anterior, superior, spine of the ilium, and, is inserted into the body and crest of the pubis: the last insertion is called Gimbernat's ligament: as it approaches this bone, it splits into two columns, leaving a triangular space between, called the external abdominal ring, out of which, emerges the spermatic cord. When the tendon of the above named muscle is removed, we bring into view the internal oblique muscle, which arises from the ilium, outer half of Poupart's ligament, and, is inserted into the pubis, just behind the external abdominal ring. From the edge of this muscle, in part, arises the cremaster muscle, which covers the spermatic cord, and descends with it into the scrotum. After removing the internal oblique, we bring into view the Transversalis muscle, which arises, also, from the iliac half of Poupart's ligament, and is also inserted into the pubis, in company with internal

oblique; it does not cover so much of the cord, as the last named muscle. The above named muscles cover the abdomen, and assist in suppating the viscera; from the manner, in which, the two last are formed, this suppat would not be sufficient, were it not for an additional structure of condensed cellular substance, interposed between the muscles and peritoneum, which is the fascia transversalis. In this fascia, about midway between the anterior superior spine of the ilium, and symphisis pubis, an opening is made, by the passage of the cord, called, the internal abdominal ring; at the inner side of this ring, we find the epigastric artery; -- which, therefore, runs between the two abdominal openings. From the above account of the anatomy of the parts, concerned in this disease, it appears, that there are two rings on each side of the abdomen, the external, formed by the splitting of the tendon of the external oblique, and the internal, by the above mentioned opening in the fascia transversalis. - - - - -

To make this structure more intelligible, it will be necessary, to recollect, that these rings are distant from each other, in an adult person, about one inch and a half; the space between is called the abdominal canal, for the passage of the spermatic cords. This cord enters the internal ring, passes obliquely downwards, and inwards, under the edges of the internal oblique, and transversalis, until it reaches the external ring, when, its course is more perpendicular, passing into the Scrotum. If we reflect for a moment, the reason is very obvious, why, the cord does not perforate the internal oblique, and transversalis muscles; as, they are deficient or wanting, from the inner half of Poupart's ligament, to their insertion. If a dissection be made of the coverings and contents of an inguinal hernia, the parts will be presented in the following order; the integuments; the superficial fascia; the cremaster muscle; and, the hernial sac, which contains the protruded parts. Inguinal hernia is more common, than either of the other species; occurring, mostly, in the Male Sex:

and, also more frequently on the right side: it is divided into reducible, irreducible, and strangulated or incarcerated. The reducible is that state, in which, the protruded parts are, easily, returned by the patient. By the irreducible, we understand, a permanent protrusion; resulting, either, from the bulk of the parts, or, from adhesions between the Sac and its contents. By strangulated, we mean that state, in which, the parts are confined by a Stricture, producing the most alarming symptoms unless that stricture be removed. Hernia also receives different appellations, according to the contents of the sac. If it contain intestine, it is called an enterocele: if omentum, epiplocele: and, if both unite to form the tumour, it is styled an entero-epiplocele. Every hernia is furnished with a sac, which is merely an elongation of the peritoneum, pushed before the protruded viscus. Surgeons have divided it, into the mouth, neck, and fundus. That portion, communicating directly with the abdomen, is its mouth; the part, immediately surrounded by the varieties of the ring, is called the neck, and,

the lower extremity, its funicle. The causes of hernia are either predisposing, or exciting: the former are a preternatural laxity of the parts, and a hereditary conformation. The exciting causes are severe exercise; as running, jumping, lifting or carrying heavy --- weights, or, by vomiting, or, long constipation, or, by blows on the abdomen, also, by straining at stool, parturition &c all these would be most apt to produce a rupture, if the abdomen should happen to be distended, at the time the injury was received. Symptoms: The reducible hernia may be known, by the tumour being smaller in the recumbent, than in the erect posture; by the patient's being able to return the protruded parts into the abdomen, upon placing himself on his back; and by the swelling increasing after eating, or when he is flatulent.

The contents of a reducible hernia may be ascertained by the following circumstances; if the surface of the tumour be uniform, and elastic to the touch, if tense and enlarged, when the patient coughs, and the contents leap into the abdomen at once,

with a peculiar noise, it is then known to be intestine, and, is called an Enterocele. If the tumour, on the contrary, imparts to the fingers a doughy sensation, if flabby, and uneven on the surface, and, the part has up gradually, and with difficulty, the case may be considered, an Epiplocele. If upon the contents slip up with a gurgling noise, leaving behind something, which is, with difficulty, returned, then, we style it, an Entero-Epiplocele.

Inguinal hernia may be mistaken for Hydrocele, or Sinocele: it may be distinguished from the former, by the tumour always commencing at the lower part of the Scrotum, and, gradually, ascending towards the abdominal ring; while hernia, usually, commences above, and descends into the scrotum. But, with the latter, a Sinocele, our diagnostics are not so clearly pointed out; as the tumour, in either, commences above at the ring, and also appears in the erect, but returns in the recumbent position, the same as reducible hernia; Our only diagnostic, is, to place the patient in the

horizontal posture, and empty the scrotum by were directed pressure, then place a finger firmly on the upper part of the ring, and request the patient to rise; if it be hernia, the tumour cannot reappear; but if enterocele, the swelling returns with increased size; owing to the return of blood into the abdomen through the veins, being prevented by the pressure. An irreducible hernia may be ascertained, by the patients not being able to return the protruded parts, either, from the adhesions between the sac and its contents, or from an enlargement of the protruded parts. The symptoms of strangulated hernia are, generally, very strongly marked; such as, sickness of the stomach, pain in the abdomen, retching, and vomiting, hiccup, and a severe pain in the tumour. In the more violent cases, bilious and stercoraceous matters are thrown up, with a quicker pulse and cooler skin, tongue various, sometimes furred, at others, clean and natural. If the stricture is not speedily removed, the vomiting is exchanged for a convulsive struggling, and the pulse becomes small thready and intermitted;

the skin is cold and moist; the eyes have now a languid and glassy appearance; and the whole aspect of the countenance is changed; the pain in the tumour subsides; the skin loses its natural colour, and becomes livid; and the patient flatters himself, that a spontaneous cure has taken place; but, this pleasure is of short duration, for the singultus and cold sweats increasing with violence, death soon closes the tragedy. We are very frequently deceived by patients, particularly females, denying the existence of any tumour, and, are led to believe the disease to be colic, such is the similitude between this affection and inguinal hernia, that, when we are called to a patient, labouring under severe pain in the abdomen, attended by sickness and vomiting, which do not yield to appropriate remedies, we ought always to suspect hernia, and request an examination, and, not unfrequently, a concealed tumour will be detected. Patients, very frequently, have a discharge from their bowels soon after the parts become strangulated, which may lead us to believe, the intestine has slipped into the

abdomen; but this is nothing more than the discharge of the feces contained below the strictured part.

Treatment

The only treatment, to be relied on in a reducible hernia, is a truss, made either by Mr. Wright of Liverpool, or Mr. Hull of New York, to be worn day and night. The treatment in irreducible hernia is, merely to support the protruded parts from hanging down, and becoming more inconvenient; which may be accomplished, in an appropriate bag Truss. In the treatment in strangulated hernia, the primary object is to replace the protruded part as soon as possible, when called to a patient laboring under this disease, we must be guided by the present symptoms and appearances. If it be a strong adult patient, I would recommend venesection, immediately, and copiously; then, make use of the taxis, which is nothing but applying pressure with the fingers, and hand as they: After placing the patient in the recumbent posture, with his head shoulders and knees elevated, and his thighs flexed on the pelvis, so as to relax the abdominal

muscles and fascea; then embrace the tumour with one hand, while, with the thumb and fingers of the other placed just above the ring, move them from side to side, kneading gently, in a manner, the tumour, and, at the same time, make gentle but steady pressure, with the first mentioned hands; three efforts must be made in the course of the cause, which is upwards and outwards; all this not succeeding in the course of three minutes, I would next put the patient in the warm bath, and after he had remained some length of time in that situation, then resume the taxis while the patient is still in the baths, This also failing, the next step is, to apply cold application to the tumour, the best of which, is powdered ice, placed in a bladder, and put on the tumour, taking care not to freeze the parts; this not being convenient, we might substitute the powdered muriate of ammonia, and nitre, aa ℥ss to ℔ss of water; this application is to be made, with cloths dipped in this solution, and frequently applied to the tumour, then resume the above mentioned taxis; this not succeeding, I would recommend the operation,

believing it to be less dangerous than the tobacco-enema, it early resorted to.

Before describing this operation, perhaps it may not be amiss to give the ancient methods: We are told by Arnaud, and Heister, that, in the time of Celsus, the surgeons never undertook the operation without cutting out the testicle, or injuring its function. Some surgeons, after cutting with one stroke of the knife down to the sac, would pass a ligature around it, and cut the sac off, together with the testicles. Others, after cutting to the sac, would apply the actual cautery to the part where the intestine came out, to unite the scrotum and pubis closely together, & to prevent a return of the rupture. Others would pass a large needle, armed with a strong ligature, through the scrotum, and then, placing to them the upper and superior ends a large piece of wood, draw the ligature tight around the whole, every day, until the parts slough off. Others, after cutting into the sac, would fill it with the whites of eggs, and continue so to do, every day, until the wound healed:

Yet nature, notwithstanding all these errors and
hasty operations, does sometimes triumph.
But surgery of the present age is seconded by
anatomical knowledge, and the operations are
performed by a more scientific skilful, and humane
manner.

The modern operation is performed in the following manner

After placing the patient on a cancer-table of a convenient height, with his legs hanging over its edge, and each foot placed in a chair, the surgeon, takes the most convenient station, and grasps the tumour with one hand; then with the scalpel in the other, makes an incision through the integuments, commencing at the upper part of the tumour, and extending it downward to its base: this lays the superficial fascia, which is to be divided in a careful manner by successive touches of the knife. In dividing this fascia, the small external artery, formerly described, is generally cut, which may require a ligature as

the hemorrhage should always be commanded as we proceed: this brings us to the cremaster muscle, the fibres of which are to be carefully cut, until we arrive at the sac; by pinching them up with our fingers, or forceps, and dividing its fibres with the knife. The next step of the operation is to be performed, by separating the sac from the intestine, and making a horizontal incision; at which a quantity of serum generally escapes, after either intestine, or omentum, or both appear at the wound, this opening is to be enlarged, and the protruded parts examined, and if formed in a proper condition, to be returned into the abdomen; a finger of either hand may be introduced between the sac and protruded parts, to search for the stricture, which will either be found at the external ring, the internal ring, or the mouth of the sac: After ascertaining the point of stricture, sometimes, by dispositive pressure with the fingers, the protruded parts may be returned without dividing the stricture.

But, if this fail, the Surgeon introduces a probe pointed, his left finger, with the flat-side between the Sac and its contents, until it reaches the stricture; he then turns up the cutting edge of the instrument, and directs the ~~it~~ stricture directly upwards, to avoid the Epigastric artery; sometimes, a very small incision will be sufficient, to liberate the parts. As soon as this is accomplished, gentle and appropriate pressure will restore the protruded parts, unless the intestine be confined by a membranous band; in that case, the gut should be drawn down, and the band carefully divided. The integuments are to be brought together, and retained by adhesive plaster, and a recumbent posture to be strictly enjoined during the cure; after which, a truss is to be worn constantly, to prevent a return of the parts. Some Surgeons recommend the truss to be put on during the healing of the wound, to glue the sides of the Sac together, and prevent a return of the hernia,... afterwards. If the patient remains costive, some

gentle laxative may be given, and its operation
assisted by a mild glyster.
We should not delay the operation too long; as a
general rule, twelve hours are sufficient to try all
the preceding remedies; also, the smaller the
hernia, the more violent the symptoms; and the
greater the danger of delay: neither should we
be deceived by a discharge of feces or flatus, and
flatter ourselves, or the patient, that the stricture
has given way spontaneously, as this is the
contents of the intestines below the stricture
part, which is discharged by the stimulus of
the stricture.